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EXAMINER

HARVEY, DAVID E

ART UNIT	PAPER NUMBER
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2614

DATE MAILED: 11/26/2003

12

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/004,046

Applicant(s)

WASHINO ET AL. 

Examiner

DAVID E HARVEY

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 April 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,26-33 and 36-255 is/are pending in the application.
- 4a) Of the above claim(s) See Continuation Sheet is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) See Continuation Sheet is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

Continuation of Disposition of Claims: Claims withdrawn from consideration are 32,33,38,47-51,54-56,59,68,69,74,84-86,89,92,94,103,104,109,110,112,115-125,127-136,138-143,145-150,157,158,170-176,185-192,202-210,219-226,235-242 and 250-254.

Continuation of Disposition of Claims: Claims rejected are 1,26-31,36,37,39-46,52,53,57,58,60-67,70-73,75-83,87,88,93,95-102,105-108,111,113,114,126,137,144,151-156,159-169,177-184,193-201,211-218,227-234,243-249 and 255.

DETAILED ACTION

I. Preface to Office action:

1. At the time of applicants' invention, those of ordinary skill in the art recognized that it was both advantageous and desirable to have implemented video and film post-production systems digitally using an appropriately programmed standard general-purpose computer. However, even as of 11/24/1994 (subsequent to applicants' effective filing date), standard general-purpose computers were still incapable of providing such post-production processing capabilities without significant modification(s):

"Standard computers do not offer digital video inputs and outputs and few, if any, parts of the system can run at real time video rates. But, as shown in figure 4, a whole system can be configured, involving the processors and RAM as well as specialist hardware such as disks, to handle video data and cards to provide video I/O. At this point the platform may no longer be capable of running a full range of software packages - some parts requiring re-configuration for other applications. Clearly this is no longer a standard platform."

[Note the first paragraph under the heading "Solution 3 - The standard platform" on page 2/9 of the publication "NON-STANDARD PLATFORMS - READY FOR THE DIGITAL ERE" by Owen et al. of "Quantel Limited"].

Being such, at the time of applicants' alleged invention, those of ordinary skill in the art were building video and film post-production systems around, i.e. "based on", general purpose computers.

"With the constant increase in general purpose computational power, many digital post-production systems are now being based on general purpose, commercially available computer systems rather than proprietary ones. The rate at which film and video post-production is digitally processed is proportional to the use of general purpose computers in this industry."

[Note the abstract on page 442 of the publication "The Digital Transformation Of Hollywood: Format and Resolution Independent Digital Post-production" by Epstein et al.]

Applicants' alleged invention itself appears to fall within the state-of-the-art that has been discussed above. That is, applicants' own alleged invention appears to be directed to a general-purpose computer that has been modified with a specialized circuitry, i.e. the described/claimed "graphics processor", to perform a variety of video/film production/post-production operations.

"The present invention takes advantage of general-purpose hardware where possible to provide an economical multi-format video production system. In

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the preferred embodiment, specialized graphics processing capabilities are included in a high performance personal computer or workstation, enabling the user to edit and manipulate an input video program and produce an output version of the program in a final format that may have different frame rate, pixel dimensions, or both."

[See the first paragraph under the heading "Summary of the Invention" of the instant written description].

As to applicants' alleged invention, it is noted that the instant specification appears to have disclosed three different embodiments:

#1) Figure 3 of the instant specification illustrates a "disk-based video recording system" whereby the video signals produced by the cameras of figures 2A-2C may be processed and/or recorded on removable hard disk (@ 70). The disk-based recording system of figure 3, however, does not appear to receive a plurality of video signal having a plurality of video signal formats at any given time.

#2) Figure 4, on the other hand, illustrates a "multi-format audio/video production system" which operates to process and output video signals of different formats. While the production systems of figures 4 include removable hard disk units (@ 104 and 238) the instant written description, as originally filed, appears to be silent as to its purpose. That is, it is unclear if the removable hard disk of figure 4 actually recorded received video signals or whether it served only as an input means for pre-recorded hard disks provided, for example, from the recording system of figure 3. Originally filed claim 7 (e.g. within S.N. 08/298,104) suggests that the removable hard disk of the figure 3 embodiment served the latter purpose; i.e. namely, an input for pre-recorded video/audio.

#3) Lastly, figure 7 illustrates a "complete television production system". As described this system appears:

a) To receive digital video signals having a single common digital signal format (@ 218, 220, and 222);

b) To use the illustrated storage devices (@ 236, 240, and 238) to record the received and processed digital video signals of common digital format; and

c) To include a "graphics processor" (@ 242) for convert the digital video signals of common digital format into analog signal video signal outputs having any one of a plurality of analog video signal formats.

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Thus, as in the case of figure 3 embodiment, the embodiment of figure 7 does not appear to receive a plurality of video signal having a plurality of video signal formats at any given time.

2. As noted in paragraph 1 of this Office action, the system of figure 4 appears to be the only one of the three disclosed systems that operated to receive and process a plurality of video signals of a plurality of different video signal formats; i.e. the system which was the "multi-format video/audio production system" of the title. The system of figure 4 comprised:

- a. Input/Output interface circuitry (@ 120,124,128 re 4) for receiving video signals in any one of a plurality of video signal formats and for converting all of the received video signal into a common video production format which, preferably, represents a frame rate of 24 frames per second;
- b. Computer based video recording/production circuitry (@ 100, 102, 104, 106, 110, 112, and 114 of figure 4) for processing the received video signals using the common intermediate video production format to produce processed video signals having said same intermediate video production format; and
- c. Said input/output interface circuitry (@ 120,124,128 of figure 4) for receiving the processed video signals, for converting the processed video signals back into one or more of said plurality of video signal formats, and for outputting the so converted processed signal.

Additionally, the following is hereby noted:

- a. That the production system of figure 4 included optional audio interface circuitry e.g. @ 136 of figure 4) which allowed associated audio signal components to be received, processed, and outputted along with the received, processed, and outputted video signals;
- b. As originally filed, the written description described figure 4 as "generally" showing "graphics processor" at reference numeral "116". However, turning to figure 4 one finds that there is no reference numeral "116". While figure 4 illustrates a box labeled "graphics processor" it is unclear from the figure exactly what this box is and what functions it performs; e.g. at first glance, it appears that this illustrated "graphics processor" of figure 4 might only function to provide a "COLOR GRAPHICS OUTPUT" for a printer. However, the instant written description (as well as claim 1 as originally filed in S.N. 08/298,104) make it clear that the "graphics processor" of figure 4 comprises the illustrated "interface"

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circuitry too [in fact, instant claim 1, continues to recite this same structural configuration].

c. That the computer based video recording/production circuitry has access to a variety of storage devices including an internal hard disk drive (100 of figure 4), a tape-back-up drive (102 of figure 4), and/or a hard disk drive with removable disks or a removable hard drive (104 of figure 4). The purpose served by the removable disk/disk drive of figure 4 does not appear to be stated within the written disclosure as *originally filed*, but claims 1 and 7 of the originally filed patent application [S.N. 08/298,104] indicate that it served as an input device for receiving signals to be processed:

“means to receive an input signal representative of an audio/video program in one of a plurality of formats”.

[lines 3 and 4 of claim 1 as originally filed]

“wherein the means to receive a video program includes a removable high-capacity magnetic storage medium”.

[lines 2-4 of claim 7 as originally filed].

3. Conventional telecine systems were known to have generated 60 frame per second video signals, from 24 frame per second film, by selectively repeating ones of the scanned film frames thereby creating **“redundant fields and or frames”** within the produced 60 frame per second telecine video signal. The prior art of record showed that, during the video production/post-production process, it was conventional for computer driven editing systems to have converted such telecine generated video back to the 24 frame per second frame rate, e.g. by deleting the redundant fields/frames, prior to compression/processing [See U.S. Patent #5,930,445 to Peters et al.]. To distinguish the instant invention over such prior art during the prosecution of parent reissue application (#09/113,615), applicants added limitations to the claims which indicated that the video signals, being converted into the 24 frame per second frame rate by the claimed invention, had no “redundant fields/frames”; i.e. that the video signals being converted to the 24 fps frame rate for processing were “original”/“live” video signal productions and not those produced by conventional telecine [note the second and third full paragraphs under the heading “Summary of the Invention” in columns 1 and 2 of said U.S. Patent #5,930,445 to Peters et al.].

Applicant has attempted to carry the noted “non-redundant frame/field limitation” from the parent reissue application into claims of the instant application in one form or another (e.g. lines 4-6 of claim 26). However, the context in which this recitation is used in the new claims of the instant application appears to be different from the context in which it was used in the parent reissue application. Thus, the meaning of the “non-redundant frame/field limitation” (and alleged section 112-1 support) is no longer apparent with respect to the instant claims.

II. Election/Restrictions

4. As was addressed in section I above, the instant disclosure discloses three species of video/audio production circuitry:

- a. The species of video/audio production system that is shown in figure 3 which, in combination with the camera circuitry that is shown in figures 2a-2c, operates to process and record video/audio programming provided from said camera circuitry;
- b. The species of video/audio production system that is shown in figures 4-6 which operates to receive a plurality of multi-format video signals at a plurality of inputs (i.e. wherein the inputs include video provided from removable hard disk unit 104) and convert the plurality of input signals to a common intermediate format for processing; and
- c. The species of video/audio production system that is shown in figure 7, that operates to receive, record, and playback compressed digital video signals received at a plurality of inputs.

5. This application contains claims 1, 26-33, and 36-255 directed to the following patentably distinct species of the claimed invention:

- 1) The species of video/audio production system that is represented by figure 3;
- 2) The species of audio/video production system that is represented by figure 4; and
- 3) The species of audio/video production system that is represented by figure 7.
[Note: paragraph 1 of this Office action]

Original claim 1 and claims 252-254 appear to be directed to solely to the species of figure 4. Therefore, applicant has constructively elected the species of figure 4 for prosecution on the merits to which the claims of the current application shall be

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restricted if no generic claim is finally held to be allowable. Currently, the following claims are generic (grouped based on dependency):

- B) 26, 27-31, 36, 37, 113, 159-169
- D) 39, 40-46, 52, 53, 57, 58, 114, 177-184
- F) 60, 61-67, 70-73, 111, 126, 193-201
- H) 75-83, 87, 88, 93, 137, 211-218
- J) 95, 96-102, 105-108, 144, 227-234
- L) 151-156
- M) 243-249
- O) 255

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

6. With respect to the constructively elected claims of paragraph 5, restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 252-254, drawn to circuitry for reducing the bandwidth of chrominance video signal components, classified in class 348, subclass 661.
- II. Claims 1, 26-31, 36, 37, 39-46, 52, 53, 57, 58, 60-67, 70-73, 75-83, 87, 88, 93, 95-102, 105-108, 111, 113, 114, 126, 137, 144, 151-156, 159-169, 177-184, 193-201, 211-218, 227-234, 243-249, and 255, drawn to a video/audio production circuitry, classified in class 348, subclass 722.

7. Inventions I and II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention I has separate utility such as reducing the bandwidth of chrominance components for processing video signal within the video camera environment (i.e. outside the processing environment of figure 4). See MPEP § 806.05(d).

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8. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

Again it is noted that original claim 1 is directed to invention II and therefor applicants have again constructively elected invention II for examination herein.

9. As a result of the restriction requirement set forth above:

1) Claims 1, 26-31, 36, 37, 39-46, 52, 53, 57, 58, 60-67, 70-73, 75-83, 87, 88, 93, 95-102, 105-108, 111, 113, 114, 126, 137, 144, 151-156, 159-169, 177-184, 193-201, 211-218, 227-234, 243-249, and 255 will be examined within the instant application; whereas

2) Claims 32, 33, 38, 47-51, 54-56, 59, 68, 69, 74, 84-86, 89-92, 94, 103, 104, 109, 110, 112, 115-125, 127-136, 138-143, 145-150, 157, 158, 170-176, 185-192, 202-210, 219-226, 235-242, 250, 251, and 252-254 are hereby withdrawn from consideration.

10. Summary of claim status by grouping [i.e. groups "A"- "O"]:

Elected: A) 1

Generic: B) 26, 27-31, 36, 37, 113, 159-169
D) 39, 40-46, 52, 53, 57, 58, 114, 177-184
F) 60, 61-67, 70-73, 111, 126, 193-201
H) 75-83, 87, 88, 93, 137, 211-218
J) 95, 96-102, 105-108, 144, 227-234
L) 151-156
M) 243-249
O) 255

Non-elected: B) 32, 33
C) 38, and 170-176
D) 47-51, 54-56, 110, 115-125
E) 59, and 185-192
F) 68, 69, and 127-136
G) 74, 112, 202-210
H) 84-86, 89-92, 138-143
I) 94, 219-226
J) 103, 104, 145-150
K) 109, 235-242
L) 157, 158

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M) 250, 251

N) 252-254 (note paragraphs 4 and 5 above)

Wherein (for example):

1) Claims 32,33,38, 49-51,68, 69, 74, 85, 86, 94, 112, 170-176, 202-210, and 219-226 appear to be directed only to the species of figure 7 due to the fact that the information that is received and displayed is compressed digital data;

2) Claim 47 appears to be directed only to the species of figures 3 and 7 because the removable hard disc of the figure 4 embodiment only appears to have been described as a source of input video and not as a storage device for intermediate video.

3) In the figure 4 embodiment, the graphics processor comprises the signal receiving device/means. Thus claim 49 must be directed to at least one of the other two embodiments.

4) The recitation of claims 54-56 appears to be limited to the receiver embodiment of figure 7

5) In the figure 4 embodiment the graphic processor and the storage medium appear to be located at the same geographical location and therefor the recitations of claims 84, 89-92, 115-125 and 127-136 seem to be directed to another one of the two embodiments (namely the figure 7 embodiment).

III. Section 112 rejections:

11. Claims 1, 26-31, 36, 37, 39-46, 52, 53, 57, 58, 60-67, 70-73, 75-83, 87,88, 93, 95-102, 105-108, 111, 113, 114, 126, 137, 144, 151-156, 159-169, 177-184, 193-201, 211-218, 227-234, 243-249, and 255 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

On one hand, the written description (as originally filed) appears to indicate that the disclosed "graphics processor" was to be implemented using "dedicated hardware."

"The graphics processor 82 represents dedicated hardware that performs the various manipulations required to process the input video signals 84 and the output signals 86..."

[Lines 8-11 of column 9]

"while a software-based implementation of the processor 82 is possible, a hardware-based implementation is preferred ..."

[Lines 16-18 of column 9]

However, with respect to the figure 4 embodiment of said "graphics processor", the written description (as originally filed) seems to suggest that the technology needed to implement the described/claimed *versatile* "graphics processor" was not yet available at the time of filing.

"A key aspect of the system is the versatility of the graphics processor shown generally as 116. Eventually, dedicated hardware will allow the best performance for such operations as image manipulations and re-scaling, but it is not a requirement of the system that it assumes these functions".

[Lines 62-66 of column 9]

That is, when describing specific structure, the "graphics processor" appears to be anything but "versatile". Namely, as described, the "graphics processor" of figure 4 appears to comprise nothing more than a collection of standards/format

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conversion hardware dedicated to performing respective video signal standard/format conversions.

"One possible physical implementation would be to create a separate circuit board for each of the sections as described below, and manufacture these boards so as to be compatible with existing or future PC-based electrical and physical interconnect standards"

[Lines 5-10 of column 10]

"Commercial standards-converters are available to perform this function, however, from companies such as Snell & Wilcox"

[Lines 63-65 of column 10]

Given the above, it appears that applicant's disclosure pertaining to the versatile "graphics processor" is little more than an invitation to experimentation. Specifically, applicants are hereby requested to provide evidence showing that applicants' written description is in fact enabling of the "graphics processor" that is currently being claimed.

12. Claims 1, 26-31, 36, 37, 39-46, 52, 53, 57, 58, 60-67, 70-73, 75-83, 87,88, 93, 95-102, 105-108, 111, 113, 114, 126, 137, 144, 151-156, 159-169, 177-184, 193-201, 211-218, 227-234, 243-249, and 255 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

1) Claim 1, line 4, recites "audio/video program". It is not clear whether this limitation requires "audio" to be present. Clarification is needed. Similar clarification is needed throughout the claim.

2)The IEEE Standard Dictionary of Electrical and Electronic Terms (sixth addition) indicates that the term "graphics processor" is synonymous with the term "display processor". The term "display processor" is defined as:

"A hardware device that executes a sequence of display commands to create a display image. Synonym: graphics processor."

With respect to the instant figure 4 embodiment of invention (e.g. as claimed in lines 6-17 of claim 1), applicant appears to use the term "graphics processor" to refer to an interface comprises of standards converting device/devices capable of

converting received video signals into a common intermediate format and of converting the common intermediate format into various output signal formats [e.g. lines 8-11 of column 9]. Being such, the meaning/use of the "graphics processor" terminology in the written description and throughout the pending claims is not understood and, in fact, appears to be repugnant to its accepted use/meaning as understood by those of ordinary skill in the art. Clarification as to is needed.

3) Lines 5-7 of claim 39 recite:

"the digital video component having an intermediate format having a frame rate of substantially 24 frames per second (fps) with no added redundant frames or fields" (emphasis added)

The insertion of the "with no added redundant frames or fields" limitation here is confusing, misleading, and meaningless because, as now recited, it is being related to the 24 fps intermediate video format rather than the 30 fps video format of the received signals. It is the conversion of 24 fps "video" into the 30 fps format via the typical telecine process that causes the resulting 30 fps telecine video (and not 24 fps video as is currently recited) to have "added redundant fields or frames". Thus, the inserted "with no added redundant frames or fields" limitation in the context of the instant recitation has no basis in the original specification and serves no purpose other than to confuse (i.e. given the fact that this same limitation has been used with respect to 30 fps input video recitations to avoid applied prior art of record). Clarification is required. Similar clarification is needed throughout the claims.

4) Line 6 of claim 52 is indefinite because the recited 24 fps of line 6 is not different than the 24 fps that was recited in line 5 of claim 39 as is required by lines 12 and 13 of claim 39. Clarification is needed.

13. Claims 1, 26-31, 36, 37, 39-46, 48, 52, 53, 57, 58, 60-67, 70-73, 75-83, 87,88, 93, 95-102, 105-108, 110, 111, 113, 114, 126, 137, 144, 151-156, 159-169, 177-184, 193-201, 211-218, 227-234, 243-249, and 255 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains

subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

a. As is noted in paragraph 1 of this Office action, applicants' alleged invention of figure 4 appears to comprise a general-purpose computer (i.e. @ 100, 106, 108, 110, 112, 114) that has been modified so as to include specialized video I/O interface circuitry (@ 116) and specialized audio I/O circuitry (@136). The specialized video I/O circuitry (@ 116) has been described as comprising at least three different I/O components (@ 120, 124, 128) each of which, i.e. as described in the written description, was to be implemented on a respective one of three separate circuit boards (note lines 6-12 of column 10 of the instant written description). From the written description, it is not clear how such video interface circuitry, comprised of three respective circuit boards, falls within the conventional meaning of a "graphics processor" [see paragraph 11 of this Office action]. Being such, it is not clear from the written description as to exactly what the "graphics processor" terminology of the instant claims means and/or to what this terminology actually refers [note paragraphs 11 and 12 of this Office action too]. Clarification is needed.

b. Given the recited operation/function of the recited "graphic processor", it appears that instant claim 1 is necessarily directed to the "multi-format audio/video production" system/embodiment of figure 4 (section I of this Office action). If this is true, then it is not clear where the disclosure as originally filed set forth the "**means** to receive a input signal representative of a audio/video program in one of a plurality of display formats" that is now recited in lines 3-5 of instant claim 1 [i.e. wherein this recitation appears to invoke a section 112-6 interpretation]. Clarification is needed

c. Claim 1, line 18, recites "a high capacity video storage **means**" (emphasis added) which appears to invoke a section 112-6 interpretation. It is not clear where the instant specification, as originally filed, described such a high capacity storage means. The recitation is made more confusing by the fact that claim 7, as originally filed in S.N. 08/298,104, seems to have indicated that indicated that it was the "receiving means" of claim 1 which comprised a "high capacity magnetic storage medium". Thus, one must question where and how the disclosure as originally filed described/distinguished the "receiving means" that is now being recited in lines 3-5 of claim 1 from the "high capacity video storage means" that is now recited in line 18 of claim 1; i.e. claims 1 and 7, as

originally filed seem to suggest that they were one and the same whereas instant claim 1 appears to indicate that they are different. Clarification is needed.

d. Again, given the structure of the recited "graphic processor", it appears that instant claim 1 is necessarily directed to the "multi-format audio/video production" system/embodiment of figure 4. However, as also noted above (see paragraphs 1 and 2 of this office action), the originally filed disclosure never appears to have described an application in which the figure 4 system/embodiment was used to record video/audio programming to its removable disk storage unit (@ 104). Instead, as indicated by originally filed claim 7, said removable disk unit of figure 4 appears to have only been described within the originally filed disclosure as having been used to supply previously recorded video programming. Being such, it is not clear where the disclosure as originally filed described a "multi-format audio/video production system" having the structure recited in lines 1-25 of instant claim 1, and which performed the processing now recited in lines 26-37 of instant claim 1 (i.e. particularly the "storage of a program in the production format in the high-capacity storage means" that is now recited). Clarification is needed.

e. As recited, it appears that claim 26 is directed to the system of figure 7 of the instant specification (note paragraphs 1-3 of this Office action). In any event, it is not clear where the instant disclosure as originally filed disclosed the recited "high capacity storage medium" having both a stored "digital audio component" and a stored "digital video component"; wherein the stored "digital video component" was:

"obtained by converting an input format with no redundant frames or fields into an intermediate format having a frame rate of substantially 24 frames per second".

Clarification is needed.

f. With respect to claim 37, it is not clear where the disclosure as originally filed described an video signal format with an image that had no pixel dimensions (i.e. in fact, it is not understood how any image can have no pixel dimensions). Clarification is needed. Similar clarification is needed with respect to claims 58, 73, 93, and 108.

g. As recited, it appears that claim 38 is directed to the system of figure 7 of the instant specification (note paragraphs 1-3 of this Office action). In any event, it is not clear where the instant disclosure as originally filed disclosed the recited

"high capacity storage medium" having both a stored "digital audio component" and a stored "digital video component in compressed format", wherein the stored "digital video component in compressed format" was:

"obtained by converting an input format with no redundant frames or fields into an intermediate format having a frame rate of substantially 24 frames per second".

Clarification is needed.

h. The "non-redundant field/frame" limitation of the claims was introduced by applicants in order to distinguish the "real" 60 Hz video signal inputs of their alleged invention from "telecine-derived" 60 Hz video signal inputs of the prior art (note paragraph 3 of this Office action). This "non-redundant field/frame" limitation pertains only to the signal format the video signal inputs themselves prior to conversion to the common intermediate format. The "non-redundant field/frame" limitation is meaningless with respect to the intermediate signal format itself. Being such, it is not clear where the instant disclosure as originally filed described the:

"digital video component having an intermediate format having a frame rate of substantially 24 frames per second (fps) with no added redundant frames" (as is now recited in lines 4-6 of claim 39).

Clarification is needed. Similar clarification is needed with respect to: lines 4-7 of claim 59; lines 5-8 of claim 60; lines 5-9 of claim 74; lines 4-6 of claim 151.

i. With respect to the limitations of claim 39, it is not clear from the written description as to:

1) What element or elements of the figure 4 embodiment correspond to the recited "signal receiving device" of lines 3-6;

2) What element or elements of the figure 4 embodiment correspond to the recited "high-capacity storage medium" of lines 7-9; and

3) What element or elements of the figure 4 embodiment correspond to the recited "graphics processor" of lines 10-14.

Clarification is needed.

j. With respect to claim 39, it is not clear where the disclosure as originally filed described the recited system which included the recited "graphics processor" of lines 10-14 wherein the recited graphics processor was "further"

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configured for "data communication with a display device for viewing the output video information in the output format". Clarification is needed. Similar clarification is needed with respect to: lines 11-17 of claim 59; lines 9-13 of claim 60; lines 10-16 of claim 74.

k. With respect to claim 60, it is not clear where the disclosure as originally filed described the recited "system for viewing video information stored on a removable high capacity storage medium" which comprised an "input device" which was "configured to read the video information from the high capacity storage medium" as is recited in lines 1-4. Clarification is needed. Similar clarification is needed with respect to: lines 1-4 of claim 74.

l. It is not clear where the disclosure as originally filed described the recited "method for viewing video information on a display device" that is now being recited in claim 75 wherein the recited method of viewing:

- 1) Receives, via a "signal receiving device", a "digital video signal component" having an "intermediate format having a frame rate of 24 frames per second" wherein the digital video signal component resulted from a "conversion of input video information having an input format with no added redundant frames or fields"; and
- 2) Stored the so "converted" input video information on a high capacity storage medium.

Clarification is needed.

m. It is not clear where the disclosure as originally filed described the recited "method for viewing video information on a display device" that is now being recited in claim 94 wherein the recited method of viewing:

- 1) Receives, via a "signal receiving device", a "digital video signal component" having a intermediate "**compressed** digital format" having "a frame rate of substantially 24 frames per second" wherein the digital video signal component resulted from a "conversion of input video information having an input format with no added redundant frames or fields"; and
- 2) Stores the so "converted" input video information on a high capacity storage medium.

Clarification is needed.

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n. With respect to claim 95, it is not clear where the disclosure as originally filed described the recited "method for viewing video information on a display device" wherein the viewed video information is stored on a high capacity storage medium, and is comprised of a "digital video signal component" having an "intermediate format having a frame rate of 24 frames per second" wherein the digital video component resulted from a "conversion of input video information having an input format with no added redundant frames or fields".

o. With respect to claim 109, it is not clear where the disclosure as originally filed described the recited "method for viewing video information on a display device" from a "removable high capacity storage medium" wherein the viewed video information that is stored on said removable high capacity storage medium comprises a "**compressed** digital format" having "a frame rate of substantially 24 frames per second" that was formed by "converting input video information having an input format with no added redundant frames or fields".

p. With respect to claim 114, it is not clear where the disclosure as originally filed describe an output format having a frame rate that was less than 24 frames per second. Clarification is needed.

q. With respect to claim 151, it is not clear where the instant disclosure as originally filed described a digital video component having a frame rate to substantially 24 frames per second and an image dimension of the recited range:

"less than or equal to about 1920 by 1080 pixels".

Clarification is needed.

r. The disclosure, as originally filed disclosed: the video recording system of figure 3; the multi-format audio/video production system of figure figure 4; and a the complete video receiving/recording system of figure 7 [note paragraphs 1-3 of this Office action]. While these disclosed systems included high capacity recording mediums, these mediums were (at best) transitory "products" of the systems in that video/audio was written to and from the medium during "production"/processing. There appears to be nothing described in the instant specification, as originally filed, to suggest that the recording mediums themselves constituted an "article of manufacturer" as now appears to be claimed in claim 151. Clarification is needed. Similar clarification is needed for claim 243.

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s. With respect to claim 161, it is not clear where the disclosure as originally filed described a HDTV output format @ 24 fps [note figure 6]. Clarification is needed. Similar clarification is needed with respect to claim 52, 70, 87, and 105.

t. With respect to claim 163, it is not clear where the disclosure as originally filed set forth the recited range of image dimensions of:

"less than or equal to about 1920x1080".

For example, where did the originally filed disclosure ever indicate that the dimensions had to be less than those that are recited? Similar clarification is needed with respect to claims 151, 178, 195, 212, 228, and 243.

u. With respect to claim 164, it is not clear where the disclosure as originally filed set forth the recited range of image dimensions of:

"greater than or equal to about 640 by 480 pixels".

For example where did the originally filed disclosure ever indicate that the dimensions had to be greater than those that are recited? Clarification is needed. Similar clarification is needed with respect to claims 179, 196, 213, and 229.

v. With respect to claim 168, it is not clear where the disclosure as originally filed set forth the recited format range of:

"a horizontal resolution of greater than 600 lines".

For example where did the originally filed disclosure ever indicate that the resolution had to be greater than those that are recited? Clarification is needed. Similar clarification is needed with respect to claims 183, 200, 217, 233 and 255.

w. With respect to claim 169, it is not clear where the disclosure as originally filed set forth the recited output image format having a frame rate that is:

"an integer multiple of 24, 25, or 30 frames per second".

Clarification is needed. Similar clarification is needed for claim 184, 201, 218, and 234.

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x. With respect to claim 177, it is not clear where the disclosure as originally filed described the recited "memory module". Clarification is needed. Similar clarification is needed for claim 193, 211, and 227.

IV. Section 102 rejections:

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

15. Claim 26 is rejected under 35 U.S.C. 102(b) as being anticipated by conventional disk/tape recording systems. The following is noted.

1) Claim 26 is directed to a "storage medium", i.e. a disk, for storing video and audio data. Therefor claim 26 appears to pass muster under section 101 in that it falls within a statutory class of patentable subject matter).

2) However, the recitations of claim 26 merely recite a recorded data carrier (i.e. a recorded "high capacity storage medium"). The rest of the claim's recitations simply described what the recorded "data" represents and fail to positively recite how this described "data" content has been recorded in relationship to the structure of the "storage medium" itself (e.g. a tape/disks tracks). Such purely descriptive recitations of recorded "data" content are equivalent to "printed matter." That is, novelty of a claimed invention cannot rest solely on what the data is that is printed/recorded but must instead rest on the way in which the data is printed/recorded.

3) Clearly enablement of applicant's own disclosure under section 112-1 rests on a level of skill in the art in which it was known to have recorded "data", e.g. digital audio and video data, on high capacity storage mediums such as magnetic and/or optical recording disks (or magnetic tape). It is maintains that such prior art clearly anticipates the recitations of claim 26 given the fact that the claim's recitation merely describe the data that is recorded on the storage medium [see part 2 above].

16. Claims 27-31, 36, 37, 113, 159, and 161-169 are rejected under 35 U.S.C. 102(b) as being anticipated by conventional disk recording systems for the same reason that was set forth for claim 26 above.

17. Claim 151 is rejected under 35 U.S.C. 102(b) as being anticipated by conventional disk/tape recording systems. The following is noted.

1) Claim 151 is directed to an "article of manufacture" comprised of a "high capacity storage medium", i.e. a disk, for storing video and audio data. Therefore claim 151 appears to pass muster under section 101 in that it falls within a statutory class of patentable subject matter).

2) However, the recitations of claim 151 merely recite a recorded data carrier (i.e. a recorded "high capacity storage medium"). The rest of the claim's recitations simply described what the recorded "data" represents and fail to positively recite how this described "data" content has been recorded in relationship to the structure of the "storage medium" itself (e.g. a tape/disks tracks). Such purely descriptive recitations of recorded "data" content are equivalent to "printed matter." That is, novelty of a claimed invention cannot rest solely on what the data is that is printed/recorded but must instead rest on the way in which the data is printed/recorded.

3) Clearly enablement of applicant's own disclosure under section 112-1 rests on a level of skill in the art in which it was known to have recorded "data", e.g. digital audio and video data, on high capacity storage mediums such as magnetic and/or optical recording disks (or magnetic tape). It maintains that such prior art clearly anticipates the recitations of claim 151 given the fact that the claim's recitation merely describe the data that is recorded on the storage medium [see part 2 above].

18. Claims 152-156 are rejected under 35 U.S.C. 102(b) as being anticipated by conventional disk/tape recording systems for the same reason that was set forth for claim 151 above.

19. Claim 243 is rejected under 35 U.S.C. 102(b) as being anticipated by conventional disk/tape recording systems. The following is noted.

1) Claim 243 is directed to an "article of manufacture" comprised of a "high capacity storage medium", i.e. a disk, for storing video and audio data. Therefore claim 151 appears to pass muster under section 101 in that it falls within a statutory class of patentable subject matter).

2) However, the recitations of claim 243 merely recite a recorded data carrier (i.e. a recorded "high capacity storage medium"). The rest of the claim's recitations

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simply described what the recorded "data" represents and fail to positively recite how this described "data" content has been recorded in relationship to the structure of the "storage medium" itself (e.g. a tape/disks tracks). Such purely descriptive recitations of recorded "data" content are equivalent to "printed matter." That is, novelty of a claimed invention cannot rest solely on what the data is that is printed/recorded but must instead rest on the way in which the data is printed/recorded.

3) Clearly enablement of applicant's own disclosure under section 112-1 rests on a level of skill in the art in which it was known to have recorded "data", e.g. digital audio and video data, on high capacity storage mediums such as magnetic and/or optical recording disks (or magnetic tape). It is maintains that such prior art clearly anticipates the recitations of claim 243 given the fact that the claim's recitation merely describe the data that is recorded on the storage medium [see part 2 above].

20. Claims 144-249 are rejected under 35 U.S.C. 102(b) as being anticipated by conventional disk/tape recording systems for the same reason that was set forth for claim 243 above.

IV. Section 103 rejections:

21. The following represents the state of the art which existed at the time of applicants' invention and thus represents the context in which the teachings of the applied prior art should/must be read:

- Multi-format/Multi-standard electronic film and video (post) production systems were notoriously well known in the art at the time of applicants' alleged invention. That is, in order to have combined electronic film and video signals of different formats/standards, it was both known and necessary to have converted all of the signals of different formats/standards into a common intermediate production system/signal format.

"In video signal production systems in which video signals are combined and/or manipulated, it is necessary that any signals to be combined are of, or are converted to, [the] same format. Accordingly, format conversion of input signals to the format of the production system and/or format conversion of signals from the production system to a required output format becomes necessary for many applications"
[Lines 22-30 of column 1 in US Patent #5,329,309 to Dorricott et al.]

The format/standard that was chosen (by the user) to be this common intermediate production system/signal format was nothing more than a choice of convenience.

"Post-production is program assembly into a single entity, generally by firms independent of production houses, of the various component parts often from a variety of sources and in more than one format. The production standard is for the convenience of the program producers and need not be subject to government agreement or approval."

[Note the discussion under the headings "STANDARDS (1)" and "Production Standard" in the second column on page 50 of the publication "High-Density Magnetic Recording: A Driving Force for HDTV?" by Johnson, Jr.]

Intermediate common formats having the frame rate of film (24 fps), or multiples thereof, were known in the art as having been optimal when the majority of the digitized video being processed was derived from 24 fps film material.

"It is possible, however, to create a digital recording format optimized for film-originated material, from which most other distribution format can be electronically derived.

To capture the image structure and quality of film, such format would be 24 frames per second, greater than 1000 lines, and progressively scanned.

Our industry seeks such a common format." (emphasis added)

[The 1993 document by the "Technology Council of the Motion Picture-Television Industry"]

"A production standard presently being proposed by U.S. television production and post-production companies calls for a 72 frames/sec., 1800 line, digital, progressively scanned signal."

[Note the discussion under the heading "Production Standard" in the second column on page 50 of the publication "High-Density Magnetic Recording: A Driving Force for HDTV?" by Johnson, Jr.]

"At the completion of this digitization process, the editing system has a complete digital representation of the source film in film format, i.e. 24 fps, ..."

[lines 46-48 of column 7 in U.S. patent #5,930,445]

- As already noted in paragraph 1 of this Office action, at the time of applicants' alleged invention, there was a recognized trend in the video and film production/post-production arts toward towards the implementation and use general-purpose computer-based video/film production/post-production systems given all of the known advantages provided thereby including, but not limited to, video signal "format and resolution independence".

"The clear advantages of digital post-production, especially when performed on general purpose computers, are further enhanced by format and resolution independence. Format and resolution independence enables the combination of elements obtained from multiple mediums, e.g. film, video, print and computer graphics. Imagery from one format cane be easily transformed and resized to any desired output format and resolution. This provides much greater creative and production flexibility when planning and bidding jobs."

[The first full paragraph under the heading "3. Format and Resolution Independence" in the second column on page 443 of the publication "The Digital Transformation of Hollywood: Format and Resolution Independent Digital Post-Production" by Epstein et al]

"Advances in several technologies have enabled the use of digital computers for post-production applications. With the advent of powerful workstations and server class machines, the processing power necessary for computing the effects required to do post-production is now available. These machines themselves are able to exist due to the ongoing advances in microcomputer technology, memory capacity, and bus bandwidth which are now increasing at exponential rates. Advances in disk storage technology also play an important role. The increase in disk densities along with the corresponding reduction in size now makes it possible and affordable to have gigabytes of storage on line, enough for hours of full resolution digital component video or minutes of high resolution film imagery. RAID (Redundant Arrays of Inexpensive Disks) technology has provided the disk bandwidth so that full resolution video can be captured to, or played back from disk in real time. High-speed network technology has provided the means for moving the large quantities of image data between machines at cost effective rates. CCD cameras and scanners now provide a repeatable, resolution independent mechanism for converting image data into a digital form. Other technologies such as CD-ROM and a variety of compression techniques, such as JPEG and MPEG, have real-time delivery in yet another format and resolution."

[The discussion on page 442 under the heading "1. Enabling Technologies" of the publication "The Digital Transformation of Hollywood: Format and Resolution Independent Digital Post-Production" by Epstein et al]

"Film video and audio source material is frequently edited digitally using a computer system, such as the Avid/1 Media Composer from Avid Technology, Inc. of Tewksbury, Mass. which generates a digital representation of a source film, allowing a film editor to edit the digital version, rather than the film source itself. This editing technique provides great precision and flexibility in the editing process, and is thus gaining popularity over the old style of film editing using a flatbed editor"

[lines 12-21 in column 1 of U.S. Patent # 5,930,445 to Peters et al.]

"As the costs of high resolution color computer displays and processing power come down one of the emerging applications for microcomputers is video post production - displaying and editing video images using the display of the computer as a monitor during the editing process. In order to use a microcomputer in a video editing system, a video source, typically a video recorder, is read and stored in digital form on the disk of the computer. The video may be edited in digital form and written

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back to a video device. Video editing presents a large computational and storage demand, easily seen in the sheer data volume of a video program – 30 frames per second, over 300,000 pixels per frame, and several bits per pixel. In order to reduce the data volume, the video image data can be compressed as they are read, e.g. from video tape, and stored on disk. The data are then decompressed when viewed during editing or playback”

[Lines 27-43 of column 1 in U.S. Patent #5,909,250 to Hardiman]

“With recent advances in speed a storage capacity of personal computing systems, it has become possible to convert analog video information in real time into corresponding digital information, to edit the information while in digital form, and to convert the edited digital information back into an analog form.

Such an arrangement is desirable for several reasons.

First it eliminates the need for customized analog video editing machinery and instead allows a general-purpose programmable computer to perform editing. The editing program on such a computer may be changed at will thereby permitting flexibility and facilitating change when new advances in editing technology are made.

Second, digital editing offers a simpler interaction interface and permits relatively unskilled workers to produce sophisticated results. As skill grows, a more complete set of editing effects may be generated through the use of computer graphics, digital image processing and text editing.

Finally, as the cost of personal computing machinery decreases, it becomes possible for more people to use video editing capabilities. Those capabilities would be foreclosed to an ordinary individual who could not afford high-end and single use items such as analog editing machinery”

[Lines 15-39 in column 1 of U.S. Patent #5,367,341 to Schnorf]

“With the constant increase in general purpose computational power, many digital post-production systems are now being based on general purpose, commercially available computer systems rather than proprietary ones. The rate at which film and video post-production is digitally processed is proportional to the use of general purpose computers in this industry. As the general purpose computers replace the special purpose ‘black boxes,’ digital post-production facilities can customize applications and user interfaces. At the same time all constraints of resolution and format dependence are being removed. The distinction between video, film, and print is blurring. Resolution and format independence is changing the traditional market place by

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allowing post houses to compete for business in markets previously closed to them"

[Note the "Abstract" on page 442 of the publication "The Digital Transformation Of Hollywood: Format and Resolution Independent Digital Post-production" by Epstein et al.]

22. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

23. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Frederiksen [US Patent #5,272,529] in view of Schnorf [US Patent #5,367,341].

A) As is shown in figures 2 and 3, Frederiksen disclosed a video/audio encoder system for reducing the amount of video/audio data (i.e. bandwidth compression) prior to transmission and/or **storage** [note lines 10-15 of column 1]. As is shown in figure 2, the system operates to receive video signals having any on of a plurality of frame rates – namely 30 Fps and 24 Fps. The encoder system then compresses ones of the plurality of received signals into a "common intermediate video signal format" which always has the "preferred" frame rate of 24 Fps (note lines 3-6 of column 7). Hence, the compression involves the conversion of

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received 30 Fps video signals into 24 Fps intermediate video signals. This 30 to 24 Fps conversion was effected by:

- a) The deletion of redundant frames/fields when the received 30 Fps video is derived from film using conventional telecine (note lines 8-36 of column 5); and
- b) The adaptive reduction of non-redundant frame/field information when the received 30 Fps is "live"/real video (note lines 3-12 of column 7).

In all cases the audio component of the video signals are injected into the compressed video data stream (@ 63 of figure 3) prior to said transmission or storage.

B) Claim 26 differs from the system disclosed by Frederiksen only in that:

- 1) Frederiksen did not specify the "medium" that was to be used to store the compressed digital video/audio signals that were produced by the illustrated encoder;
- 2) Frederiksen did not describe the decoding process that necessarily occurred, e.g. reception/storage, to decompress the compressed video/audio signals.

C) Figure 1 of Schnorf is cited as being illustrative of the fact that high capacity storage mediums (e.g. hard disk, optical disk, and tape) were all well known and recognized high capacity storage mediums on which compressed video data was conventionally stored; i.e. such being general knowledge. Armed with this general knowledge, one skilled in the art would have recognized the fact that Frederiksen's explicit reference to "storage" was obviously directed to, or at least encompassed, these conventional high capacity video recording mediums.

Figure 1 of Schnorf is also cited as being illustrative of the fact that decoding/decompression would be necessary on the playback side of high capacity storage mediums which store compressed video signal (e.g. note element 6 of figure 1); i.e. such again being general knowledge. Armed with this general knowledge one skilled in the art would have recognized the obviousness of having located a corresponding decoding/decompression system on the playback side of the "storage" that was described in Frederiksen to convert the compressed video/audio data back into a usable (i.e. displayable) decompressed video signal format of at least 24 Fps and/or, more likely, 30 Fps (i.e. being that these are the original frame rates of the video signals that were received prior to compression).

24. Claims 27-31, 36, 37, 113, 151-156, 159, 161-169, and 243-249 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frederiksen [US Patent #5,272,529] in view of Schnorf [US Patent #5,367,341] for the same reason that was set forth fro claim 26 above.

25. Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Peters et al. [US Patent #5,930,445].

A) For reasons that have been fully addressed above, little to no patentable weight has been given to the recited "graphics processor" terminology being that that the terminology has been used within the instant written description in a manner:

1. That appears to be repugnant to its conventional meaning; and
2. That is so overly broad that it, as described, encompasses collection of conventional video standards converters.

B) The examiner takes "Official Notice" that it was notoriously well known in the video/film production/post-production art, at the time of applicants' alleged invention, to have been both advantageous and desirable to have to have implemented video/film production/post-production systems digitally via specialized general-purpose computers. As in the case of applicants' alleged invention, these specialized general-purpose computer configurations often (if not necessarily) utilized:

1. Some type of data compression, e.g. such as MPEG and JPEG compression techniques, in order to reduce the data rates of the video data being processed down to rates that could be handled by the general-purpose computers' hardware (e.g. processing hardware, storage hardware, etc,...); and
2. Conventional disk storage technology to provide instantaneous random access to the "compressed" video data that was being stored and processed by the computer implemented production/post-production systems.

[Note: paragraph 21 above]

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C) Peters et al has been cited because it illustrates a computer implemented video/film production/post-production system of the type that has been alluded to in part "B" of this rejection. Namely, the Peters et al. invention pertained to a video production system that was implemented digitally using a specialized general-purpose computer. As is shown in figure 1, the computer implemented production system disclosed by Peters et al. comprised:

1) A source of video signals (@ 20) wherein the video signal source provides 30 fps video signals that were generated via a telecine scanning process and, thereby, which include redundant fields and frames;

2) Circuitry (@ 26) for converting the supplied video signal into an intermediate digital video signal format having a reduced frame rate of 24 frames per second, wherein the 24 fps rate was obtained from the 30 fps video by deleting the redundant fields and frames [e.g. lines 40-52 of column 7];

3) Video and audio compression circuitry (e.g. @ 30,24) for:

a) receiving the reduced 24 fps digital video signal component from the converter (@26) and for receiving audio data from the converter (@22); and

b) producing compressed video/audio data at a sufficiently reduced data rate so as to allow the data to be stored (@32) and processed (@18) by the general-purpose computer hardware (@18, 32, and 34),

wherein the compressed data represents the 24 fps digital video signal component from converter (26) that has no redundant fields or frame;

4) A disk storage device (@32) that receives and stores the compressed 24 fps video/audio data provided from the video and audio compression circuitry (@ 30,24), wherein the medium is in "communication" with respect to the compression circuitry at least to the extent that it receives signaling therefrom; and

5) The computer (@ 18) whose description included the following:

"The displays 12,14 and audio output 16 are all controlled by computer 18"

[lines 17-18 of column 3]

"In operation, video and audio source material from a film which has been transferred to a videotape is received by the system vide the tape recorder 20, and is preprocessed and digitized by

the audio A/D 22, audio processor 24, video A/D 26, and video compressor 30, before being stored in the disc storage 32. The computer is programmed to display the digitized source video on the first of the CRTs 12 and play the accompanying digitized source audio on the audio output 16. Typically source material is displayed in one window 36 on CRT 12 and edited material is displayed in a second window 38 of that CRT."

[lines 36-46 of column 3]

With respect to the limitations of claim 39, the following is noted:

a) The recited "signal receiving device" of lines 3-6 is met by the disk storage device itself (@ 32) of Peters et al. in that this disk storage device receives the compressed audio/video data from the compression circuitry (@ 30, 24) wherein the compressed audio/video data represents a video component of intermediate signal format having a frame rate of 24 fps with no redundant fields or frames;

b) The recited "high capacity storage medium" of lines 7-9 is met by the recording disk that, at least *obviously*, is located within the disk storage device (@32) onto which the compressed audio/video data is stored and retrieved; and

c) The recite "graphics processor" of lines 10-14 reads on elements 18, 22, 24,26,28, and 28 of Peters et al which functioned, *at least obviously*, to convert the compressed 24 fps audio/video data from the disk (@ 32) back into a 30 fps format for recording and/or display (@12, 16, 20) [note lines 44-56 of column 8].

1. Also, while not explicitly stated, the examiner maintains that it would have at least been obvious to one of ordinary skill in the art to have implemented the CRT 12 in Peters et al. with a conventional CRT monitor having the standard scan rate of 30 or 60 frames per second (i.e. as opposed to the non-standard scan rate of 24 frames per second). This "implementation" being obvious, if for no other reason, than the fact that 30/60 fps monitors are far more common, and therefor cost far less, than ones which operate at non-standard rates. To display the 24 fps video from the disc storage 32 within the windows of such a display monitor (i.e. @ 36,38), the computer 18 of Peters et al. would have had to have converted the 24 fps rate of the stored video into an output display rate of 30 or 60 fps rate of the monitor; i.e. wherein this frame rate

conversion might simply have involved the updating/refreshing of a display memory at the 24 fps rate.

26. Claims 40-46, 52, 53, 57, 58, 160, and 177-184 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peters [US Patent #5,930,445] for the same reason that were set forth for claim 39 above.

27. Claim 60 is rejected under 35 U.S.C. 103(a) as being unpatentable over Peters [US Patent #5,930,445], for the same reasons that were set forth for claim 39 above, in view of Dorricott et al. [US #5,329,309] and Frederiksen [US #5,272,529].

A) Peters et al. disclosed a system as was set forth above in the rejection of claim 39 above.

B) Claim 60 differs from the showing Peters et al. only in that claim 60 recites that the stored 24 fps video was derived from an input signal which had no redundant fields/frames (e.g. from "live" 30fps video). In contrast, the 24 fps video that was stored on the disk (@ 32) of Peters et al. was derived from an input video signal of a telecine origin and therefor had redundant field/frames.

C) While the description of the digitally implemented production/post-production system of Peters et al. only discussed the processing of video signals of telecine scanning origin, those of ordinary skill in the art at the time of applicants alleged invention would have known that it was typical for such video/film production/post-production operations to have involved the processing of video signal segments from a wide range of sources and formats including, but not limited to, "live" video (e.g. note the showing of Dorricott et al. as was set forth in paragraph 21 above).

Given such a known need/desire to process signal of diverse format, the examiner maintains that it would have been obvious to one of ordinary skill in the art to have modified the system disclosed by Peters et al. with further format conversion circuitry to allow material from other sources/formats, e.g. including "live" video, to be converted into the compressed 24fps intermediate digital format for processing by the Peters et al. system; i.e. wherein the necessary format conversion of "live" video to a compressed 24 fps format via the deletion of non-redundant frames was a known and conventional process as evidenced by the showing of Frederiksen (lines 3-12 of column 7).

28. **Claims 61-67, 70-73, 111, 126, 193-201 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peters [US Patent #5,930,445] in view of Dorricott et al. [US #5,329,309] and Frederiksen [US #5,272,529] for the same reasons that were set forth for claim 60 above.**

29. **Claims 75, 76-83, 87, 88, 93, 137, and 211-218 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peters [US Patent #5,930,445] for the same reason that were set forth for claims 40-46, 52, 53, 58, 177-179, 181, 182, and 184 above.**

30. **Claims 95, 96-102, 105-108, 144, and 227-234 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peters [US Patent #5,930,445] for the same reason that were set forth for claims 40-46, 52, 53, 58, 177-179, 181, 182, and 184 above.**

31. **Claim 255 is rejected under 35 U.S.C. 103(a) as being unpatentable over Peters [US Patent #5,930,445] in view of Dorricott et al. [US #5,329,309] and Frederiksen [US #5,272,529] for the same reasons that were set forth for claim 60 above.**

32. **Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Frederiksen [US #5,272,529] in view of Peters et al. [US #5,930,445].**

As has been explained above, figures 2 and 3 of Frederiksen illustrate an audio/video signal encoder which received a plurality of video signals of different format; e.g. 30 fps telecine video having redundant frames, 30 fps "live" video having no redundant frames, digitized video data, etc,... As described in the written description, the system operated to compress the data rate of each of the plurality of video signals that is received by, preferably, converting each received the video signal into 24 fps intermediate video signal format [note: lines 12-36 of column 5; lines 3-12 of column 7; etc,...].

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Claim 26 differs from the showing of Frederiksen only in that claim 29 recites that the compressed video signal data of intermediate signal format is specifically stored on a "high capacity storage medium" [i.e. whereas Frederiksen broadly indicates that the compressed data was to be transmitted or stored (note lines 10-16 of column 1)].

As has been explained above, Peters et al. evidences the fact that it was well known in the art to have used audio/video signal encoders, i.e. of the type described by Frederiksen, to have compressed the audio/video data that was received, stored, and processed by computer implemented video/film production/post-production systems; i.e. wherein storage was performed via a high capacity storage medium (@ 32 of figure 1). As in the case of Frederiksen, the system disclosed by Peters et al. compressed the received audio/video signals by converting the received 30 fps video signal into an intermediate 24 fps format because, as was notoriously well known in the art, the 24fps format was optimal for the processing of film based/derived material within the production/post-production arts.

Motivated by the teachings of Peters et al., the examiner maintains that one skilled in the art would have recognized the obviousness of having utilized the audio/video encoder that was described by Frederiksen to compress the audio/video signals which were being stored and processed by a conventional computer implemented video production/post-production system being that the encoder disclosed by Frederiksen produced 24 fps intermediate signals which, as was notoriously well known in the art, was the optimal frame rate for the production/post-production of film derived material.

33. Claims 27-31, 36, 37, 113, 151-156, 159, 161-169, and 243-249 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frederiksen [US #5,272,529] in view of Peters et al. [US #5,930,445] for the same reason that was set forth for claim 26 above.

34. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dorricott et al. [US #5,329,309].

1) In order to combine video material from different sources into a single video program, it was (and still is) necessary for said video material to be of the same signal format. Thus, whenever the various video material being combined have different signal formats, the various signals of different formats must first be converted into the same "common" signal format before they are combined.

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Conventional video production and post-production system often operated to receive and combine various video signals of different formats into a single program. Therefor, the input sides of these production and post-production systems were often configured so as to include the format/standard conversion circuitry that was necessary to convert each of the received signals into the required common video signal format prior to processing. This common video signal format was known as the system's "production standard". The "production standard" that was adopted and used by any given video production and post-production was a matter of choice and was typically selected based on its convenience to the user.

"In video signal production systems in which video signals are combined and/or manipulated, it is necessary that any signals to be combined are of, or are converted to, [the] same format. Accordingly, format conversion of input signals to the format of the production system and/or from the production system to a required output signal format becomes necessary for many applications".

[Lines 22-29 in column 1 of US Patent #5,329,309 to Dorricott et al.]

"The primary requirement for this [production] standard is its suitability for post-production. Post-production is program assembly into a single entity, generally by firms independent of the production houses, of the various component parts often from a variety of sources and in more than one format. The post production standard is for the convenience of program producers and need not be subject to government agreement or approval."

[Lines 1-10 under the heading "Production Standard" in the second column on page 50 of the Johnson, Jr. publication]

Typically, however, the common "production standard" format used by given video production and post-production system was only a "intermediate" video signal format in that the output sides of conventional production and post-production systems were often configured with format/standard conversion circuitry too.

2) Dorricott et al. is cited as being illustrative of the notoriously well known production and post-production system structure discussed above. Namely, the cover page of Dorricott et al. evidences of the fact that conventional video signal format/standards converters were often placed at the input and output sides of conventional video production and post-production units in order:

a) To have converted the various video signals that were received on the input side of the video production/post-production unit (272) into the common intermediate "production standard" video signal format; and

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b) To have converted processed video signals supplied from the output side of the video production/post-production unit (@ 272) from the common intermediate "production standard" video signal format into any one of a plurality of desired output signal formats.

3) Claim 1 of the instant specification differs from the conventional video production/post-production system structure set forth above in the following ways:

a) Claim 1 states that the signals being processed represent "audio/video programming." While not clear as to its meaning, the recitation might suggest that the video programming being processed includes an audio component;

b) Claim 1 indicates that a "graphics processor" functions to convert input signals from their input signal format the common intermediate signal format, and that this same "graphics processor" includes both a "standard/widescreen interface unit" and "a high-definition television (HDTV) interface" for performing conversions on the output side from the common intermediate signal format to each of a standard, widescreen, and HDTV output signal format;

c) Claim 1 states that the system comprises a high-capacity video storage medium, and interface, and a controller, and that the controller controls the recited components of the system: to convert received audio/video programming into the intermediate production format; to store a program of production format on the storage medium; to convert a program of intermediate production format into either a standard or widescreen signal format; and to convert a program of intermediate signal format into a HDTV signal format.

4) With respect to these cited differences, the following is noted:

a) It is not clear whether the "audio/video" terminology of claim 1 actually requires an audio to be present and/or to be processed in view that the circuitry/step for processing the audio component are never recited. However, assuming that the processing an associated audio component is required, then Peters et al. [US Patent #5,930,445] is cited as being illustrative of the fact that, within the video production/post-production art, it was known and obvious to have processed associated audio components along with their respective video components. Such an implementation was clearly advantageous in that it prevented the audio component from being processed out of sync with the video component.

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b) As noted above, the recited "graphics processor" terminology was broadly defined by in applicants' own written description so as to read on a collection of conventional format/standards converters. Such a collection of converters was clearly shown/suggested by the applied prior art discussed above (i.e. namely, Dorricott et al.). As to the issue of converting video signals to widescreen and HDTV formats at the output side of the production/post-production systems, such represents nothing more than an obvious and logical upgrade of technology; i.e. being that conventional TV standards were being replaced by widescreen and HDTV (high resolution) formats.¹

c) The examiner takes Official Notice that it was notoriously well known in the art to have been desirable to have implemented video production and post-production units using a specialized general-purpose computers. Dorricott et al. did not described the structure that was to be used to have implemented production unit (272) of their invention indicating that such structure was known "prior art". Turning to the prior art, when implementing the Dorricott et al. system, it would have been obvious to one of ordinary skill in the art to have implemented the post-production unit (272) using a specialized computer (e.g. of the type disclosed by Peters et al.) given all of the well known advantages provided thereby [note paragraph 21 of this office action].

26. US Patent #5,117,289 to Farley et al. has been cited because it illustrates universal programmable scan conversion circuitry capable of changes in resolution, scale, aspect ratio, etc,...

The translation of Japanese patent document JP 4-37846 to Hiyama has been provided because it evidences the known desire to have processed film material at the 24 FPS video rate.

US Patent #5,909,250 to Hardiman has been cited because it illustrates conventional video compression circuitry for computer implemented systems.

27. The art of record has been applied to the extent of the examiner's understanding given the section 112 problems noted above.

¹ The format converters themselves were, by applicants' own admission, conventional and well known in the art (lines 63-65 of column 10).

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28. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID E HARVEY whose telephone number is (703) 305-4365. The examiner can normally be reached on M-F from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller, can be reached on (703) 305-4795. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

DEH 8/03


DAVID E. HARVEY
PRIMARY EXAMINER